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YOUNG & THOMPSON
209 Madison Street
Suite 500
Alexandria, VA 22314

EXAMINER

TOLIN, MICHAEL A

ART UNIT	PAPER NUMBER
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1791

NOTIFICATION DATE	DELIVERY MODE
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03/18/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

Office Action Summary	Application No. 10/586,483	Applicant(s) KLETHY ET AL.	
	Examiner MICHAEL A. TOLIN	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fowler (US 6447705).

Fowler teaches a process for the production of a fiber reinforced part adapted to be embedded in a matrix comprising the steps of providing a fiber-based material and spraying an adhesive resin thereon (column 1, lines 31-45; column 2, line 13-30 headlines 55-67 column 3, lines 1-17). As to the recitation of “preparing” a fiber-based material, such does not distinguish over Fowler’s teaching of moving the fiber-based material at a controlled rate while adhesive resin is sprayed thereon (column 2, lines 26-30). Alternatively, one of ordinary skill in the art would have readily appreciated that the non-woven fabric or mat suggested by Fowler is provided by some type of manufacturing process, thus satisfying the claimed step of preparing. As to the limitation of being repositionable, it is clear from Fowler that the adhesive resin has thermoplastic properties at the temperatures used for layup of a fiber-based material (column 2, lines 18-19, lines 34-38, and lines 65-67). Thermoplastic adhesive materials

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are inherently repositionable because the adhesive can be reheated to a molten state, allowing such repositioning.

Regarding the new limitation of depositing the glue on an exterior surface, Fowler applies the glue by spraying. Clearly the glue is deposited on an exterior surface when applied by spraying.

The limitations of claims 2-4, 8 and 9 are clearly taught by Fowler (column 2, lines 1-6 and lines 55-62; column 3, lines 11-17; Example 1). Regarding the limitation of avoiding pollution, Fowler indicates that the resin is fully reactive (column 2, line 2) and provides an example in which the resin is entirely comprised of reactive epoxy (Example 1). Accordingly it is clear that the resin is compatible with the matrix and will not give rise to pollution.

Regarding claim 6, a hot melt glue may comprise various compositions, but in its broadest sense requires no more than a thermoplastic material which becomes tacky upon heating and sets upon cooling. Since the resin of Fowler clearly has these properties, it is considered to satisfy the claimed hot melt glue.

3. Claims 1, 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by 102(b), Flonc (US 5080851).

The claims are rejected here to further address the limitation of a repositionable adhesive.

Flonc teaches a method of making a fiber reinforced part wherein a prepared fibrous material is sprayed with a repositionable adhesive (column 3, lines 10-38).

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Flonc teaches that the use of a repositionable adhesive greatly facilitates the formation of complex composite parts (column 3, lines 37-38). As to the claimed step of preparing, one of ordinary skill in the art would have readily appreciated that the fibrous material of Flonc is provided by some type of manufacturing process, thereby satisfying the claimed preparing limitation.

As to the new limitation, spraying clearly involves applying the glue to an exterior surface.

Regarding claim 4, Flonc indicates that the adhesive is fully compatible and reactive with the subsequently injected resin (column 2, lines 54-68). Accordingly it is clear that the resin is compatible with the matrix and will not give rise to pollution.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fowler as applied to claims 1-4, 6, 8 and 9 above.

The claims are rejected here in the alternative to further address the claimed preparing step.

While Fowler does not explicitly recite preparing the fiber-based material, the fibrous mat materials suggested by Fowler are conventionally manufactured using a variety of well known processes, thus satisfying the claimed step of preparing. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide claimed step of preparing because one of ordinary skill in the art would have been motivated to provide the mat materials suggested by Fowler in accordance with conventional methods.

6. Claims 1, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flonc as applied to claims 1, 4 and 5 above.

The claims are rejected here in the alternative to further address the claimed preparing step. While Flonc does not explicitly recite preparing the fiber-based material, the fibrous materials suggested by Flonc are conventionally manufactured using a variety of well known processes, thus satisfying the claimed step of preparing. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide claimed step of preparing because one of ordinary skill in the art would have been motivated to provide the fibrous materials suggested by Flonc in accordance with conventional methods.

7. Claims 2, 3, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flonc as applied to claims 1, 4 and 5 above, and further in view of Fowler.

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Regarding the limitations of claims 2 and 3, Fowler suggests providing a suitable stock material by placing a removable separator and rolling up as claimed (column 2, lines 55-67). It is generally well known in the art that such separators are used in order to provide improved handling and also to prevent contamination of the fibrous material. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the limitations of claims 2 and 3 because one of ordinary skill in the art would have been motivated to provide a known suitable stock material for manufacturing composite parts in accordance with the teachings of Fowler and to improve handling and prevent contamination in accordance with well known methods.

8. Claims 1, 4-6, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift (WO 94/26505 A1) in view of Adams (US 4349599) and Flonc.

Swift teaches a method of making a fiber reinforced part wherein a prepared fiber-based material is provided. In one embodiment, a heat activatable adhesive is placed on an exterior surface of the fiber-based material prior to placement of the material in a mold (page 3). While Swift does not explicitly recite applying the adhesive to an exterior surface of the mat, such is considered inherent for the mat to be able to adhere to the mold as taught by Swift. While Swift does not explicitly recite preparing the fiber-based material, the fibrous mat materials suggested by Swift are conventionally manufactured using a variety of well-known processes, thus satisfying the claimed step of preparing. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed step of preparing because one of

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ordinary skill in the art would have been motivated to provide the mat materials suggested by Swift in accordance with conventional methods.

While Swift indicates the use of a heat activated adhesive, Swift does not explicitly recite the use of a repositionable glue. It is well known in the art to use heat activated hot melt glues for positioning of fibrous materials during layup. For example, see Adams (Abstract; column 1, lines 43-52). It is noted that such adhesives are inherently repositionable because hot melt adhesives soften upon heating. As evidence for this assertion, see Flonc. Flonc indicates that thermoplastics, hot melts being thermoplastic materials, can be repositioned with heating (column 3, lines 28-30). Flonc further teaches that repositionable adhesives are desirable for facilitating the manufacture of complex composite parts (column 3, lines 37-38). One of ordinary skill in the art would have readily appreciated that a repositionable adhesive allows a misplaced fibrous mat to be repositioned without destroying, and therefore wasting, the misplaced mat. Accordingly, one of ordinary skill in the art would also have been motivated to use a repositionable hot melt adhesive in order to achieve the above noted benefit of a repositionable adhesive. Suitable repositionable hot melts are well known. While the examiner acknowledges that Flonc seeks to use a solid uncatalyzed resin due to its advantages over hot melts, it is apparent from Adams that hot melts have been used in the art for positioning fibrous materials during layup and that such adhesives are suitable. It is also clear from Flonc that such adhesives are repositionable. Selection from among known suitable adhesives involves no more than expected and routine experimentation for one having ordinary skill in the art. It would have been obvious to

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one of ordinary skill in the art at the time of the invention to provide a repositionable hot melt adhesive as the heat activated adhesive of Swift because one of ordinary skill in the art would have been motivated to use known suitable adhesives in accordance with Adams, such adhesives being repositionable as evidenced by Flonc. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a repositionable hot melt adhesive as the heat activated adhesive of Swift because one of ordinary skill in the art would have been motivated to select a suitable well known repositionable hot melt adhesive to achieve the above noted advantage of repositionable adhesives, hot melt adhesives being known suitable adhesives as evidenced by Adams.

Regarding claim 4, Adams teaches that the hot melt should be compatible with the matrix material for the motivation of avoiding adversely affecting the performance of the finished part (column 4, lines 43-46). Conventional EVA hot melts of the type suggested by Adams do not contain solvents and accordingly would not be expected to give rise to pollution. Swift also desires an adhesive which is compatible with the matrix (page 3).

Regarding claim 5, applying hot melts by spraying is well known. See Flonc (column 1, lines 33-35). It is also noted that spraying would clearly involve applying the glue to an exterior surface of the fiber-based material. One of ordinary skill in the art would have been motivated to use any known suitable manner of applying the adhesive as a matter of routine design choice.

Claim 6 is satisfied for the reasons provided above.

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Regarding claim 11, Swift clearly teaches the placing limitation (page 3). Swift also clearly teaches the injecting limitation (pages 2, 15 and 16). While Swift recites "introducing" resin, rather than injecting, the claimed term "injecting" does not appear to require more than introducing resin into the mold as taught by Swift. In any event, it is conventional in the art to suitably provide resin into a mold containing fibrous reinforcement by injection.

Claim 12 is satisfied for the reasons provided above.

9. Claims 2, 3, 8-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift in view of Adams and Flonc as applied to claims 1, 4-6, 11 and 12 above, and further in view of Fowler.

Regarding the limitations of claims 2 and 3, Fowler suggests providing a suitable stock material by placing a removable separator and rolling up as claimed (column 2, lines 55-67). It is generally well known in the art that such separators are used in order to provide improved handling and also to prevent contamination of the fibrous material. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the limitations of claims 2 and 3 because one of ordinary skill in the art would have been motivated to provide a known suitable stock material for manufacturing composite parts in accordance with the teachings of Fowler and to improve handling and prevent contamination in accordance with well known methods.

Regarding claim 10, the removing step is clearly necessary when using a removable separator in order to bond the fibrous mat to the mold as taught by Swift.

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Alternatively, the removal of such separators is conventional in the art because they are intended to provide improved handling and prevent contamination. Such separators, commonly called release films or liners, are not intended to become part of the finished part. Moreover, there is no indication in Swift of providing such release liners into the mold. For these reasons one of ordinary skill in the art would have readily appreciated that the release liners suggested by Fowler would be removed prior to introducing the mat into the mold.

Claim 13 is satisfied for the reasons provided above.

Response to Arguments

10. Applicant's arguments filed 29 December 2009 have been fully considered but they are not persuasive.

Applicant argues Fowler is directed to forming a perform rather than attaching the armature to a mold. In response most of the claims do not require attachment to a mold. It would not be proper for the examiner to read such a limitation into the claims. As to the new claims containing limitations directed to forming a tack with the mold, these claims have been addressed in the new rejections provided above.

Applicant argues Fowler is directed to a catalyst-containing resin. In response, most of the claims are not limited to a particular glue. Additionally, the examiner has provided motivation to use hot melt glues of the type preferred by Applicant. In particular, Adams was applied to suggest hot melt glues (column 1, lines 43-52).

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Applicant argues Fowler places glue on an “interior surface”. However, this argument is not commensurate in scope with the claims. Most of the claims do not contain limitations of bonding the armature to the mold. Claim 1, for example does not provide any limitation as to what the armature is bonded to. Before the fiber-based material of Fowler is attached to another material, an exterior surface thereof is sprayed with resin, thus satisfying the new limitation of depositing glue on an exterior surface. Claim 1 does not preclude using the glue to bond to another fiber-based material.

Applicant argues that Fowler does not disclose a repositionable glue. The examiner acknowledges Fowler does not recite that the glue is repositionable. However, as explained in the 35 USC 102 rejection using Fowler, such is considered inherent. Applicant has not provided any evidence or specific argument against this assertion of inherency by the examiner.

With regard to Flonc, as noted above, applying glue to an exterior surface of the fiber-based material does not preclude use of the glue to bond to another fiber based material. Flonc was not relied upon for the separator. Fowler was relied upon for this limitation.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues Swift does not teach a repositionable glue. As explained in the rejections above, Adams and Flonc were relied upon for suggesting a repositionable glue.

Applicant argues Swift does not teach providing glue on an exterior surface, as currently claimed. The examiner respectfully disagrees. How could the fiber-based material be bonded to the mold as taught by Swift if the glue were not applied to an exterior surface? In any event, Flonc was also relied upon for application of glue by spraying, which would clearly involve application to an exterior surface.

Applicant argues Swift does not teach the glue being used as a tack with the mold. The examiner respectfully disagrees. See Swift, page 3.

Applicant argues Swift does not teach a separator. Swift was not relied upon for this limitation. Such is suggested by Fowler.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). The new grounds of rejection were necessitated by the new claims and new limitation of depositing glue on an exterior surface in claim 1.

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. TOLIN whose telephone number is (571)272-8633. The examiner can normally be reached on M-F 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael A Tolin/
Primary Examiner, Art Unit 1791